# CONVENTIONAL AND FLOW SYNTHESIS OF ANTIBIOTIC CARBENE SILVER DERIVATIVES

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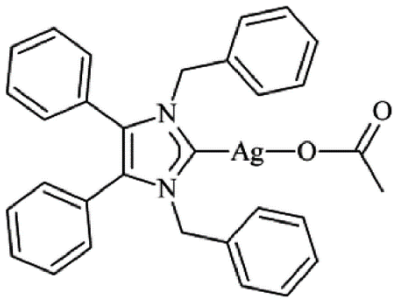
**ABSTRACT**

Antibiotic resistance is undermining public health; it is imperative that new classes of antibiotics are discovered and developed by companies and academic institutions alike. Previous research by this group used the excellent adaptability of *N*-heterocyclic carbene (NHC)-silver compounds, which allowed for the discovery of the lead compound 1,3-dibenzyl-4,5-diphenylimidazol-2-ylidene silver(I) acetate (SBC3) [1]. SBC3 breaks the methicillin-resistance in *Staphylococcus aureus* (MRSA) [2] and has proven effective in *in vivo* tests using *Galleria mellonella* [3]. More recently, encouraging parts of the antibiotic mechanism of SBC3 were discovered, which underlines the ability of SBC3 to break antibiotic resistance patterns [4]. And SBC3 was tested successfully against biofilms *in vitro* and against MRSA in-infected mice *in vivo* [5]. In addition, a telescoped continuous flow route was developed which surpassed the previous batch approach. This provided for a scalable means to afford the targets in higher yield.




STRUCTURE OF THE ANTIBIOTIC DRUG CANDIDATE SBC3

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https://doi.org/10.24355/dbbs.084-202110261729-0